

REMARKS

Claims 1-20 and 24-29 are pending in this application. Claim 1 is amended; support for this amendment is found in the specification on page 12, line 3 through page 13, line 14.

In the Office Action dated December 17, 2004, the Examiner rejected claims 1-20 and 24-29 under 35 U.S.C. 112, second paragraph, as being indefinite. Applicants submit that claim 1 has been amended to clearly show that the second slurry can contain an abrasive or the second slurry can be essentially abrasive-free. Applicants submit that amended claim 1 overcomes this rejection and therefore, claims 2-20 and 24-29 are dependent upon a valid base claim. Thus, Applicants respectfully submit that this claim is moot.

Further, the Examiner rejected claims 1-6, 10, 12, 13, 17-20, and 24-29 under 35 U.S.C. 102(b) as being anticipated by United States Patent 5,985,748 (i.e., "Watts"). Applicants respectfully traverse this rejection.

The Watts reference is directed to a two-step process wherein "...a first portion of the metal is removed by the first polishing step... and a second portion, overlying the dielectric layer, is removed by the second polishing step" The Watts reference discloses that "...the second step is carried out to remove completely thin metal layer 39a ...". The thin metal layer 39a includes a portion of the original copper metal and the TaN barrier layer... (See the specification, column 3, lines 56-60). See also Figure 3 that shows the thin metal layer 39a overlaying the dielectric layer 34; and Figure 4 that shows the thin metal layer 39a (which also includes the TaN barrier layer) completely removed and a passivation layer 40 directly applied to the ILD layer 34.

Applicants submit that the claimed invention is directed to a two-step process wherein the first step removes a portion of the metal layer (e.g., copper overburden) overlaying the barrier layer (e.g., tantalum or TaN) without clearing the entire metal layer. In general, trenches are etched into a dielectric material, a barrier film such as tantalum is inlaid into the trenches and a copper overburden is applied (See page 1, lines 15-18 of the specification). A second polishing step is employed to remove at least a portion of the remaining metal layer (e.g., the copper overburden) without essentially completely removing the underlying barrier layer (e.g., tantalum or TaN); see page 13, lines 5-8. In the present invention, the second step of the two step process removes at least a portion of the metal layer but does not essentially completely remove the barrier layer and thus, following completion of the second polishing step in the claimed invention, at least a portion of the barrier layer remains overlaying the dielectric layer. See page 3, lines 1-5, of the specification.

In view of the foregoing, Applicants submit that the invention of claims 1-6, 10, 12, 13, 17-20 and 24-29 is not anticipated by the Watts reference and therefore, the rejection under 35 U.S.C. 102 should be withdrawn.

Furthermore, the Examiner rejected claims 7, 9, 11 and 14-16 under 35 U.S.C. 103(a) as being unpatentable over the Watts reference. Applicants traverse this rejection. The Examiner states that the Watts reference discloses that the chemical oxidizer and the abrasive component will change depending on the particular metallurgy. Applicants submit that picolanic acid and other materials such as precipitated silica, bromic acid and anticorrosion agent are not disclosed nor even suggested by the Watts reference. A proper analysis under Section 103 requires, *inter alia*, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success. *In re Vaeck*, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

It is now well established by the Federal Circuit that cited prior art must provide one of ordinary skill in the art with the motivation to use the disclosure of a reference in a manner that renders the claims obvious; namely, there must be some teaching suggestion or incentive in the prior art disclosure that supports the rejection. This requirement stands as the critical safeguard against hindsight analysis and rote application of the legal test for obviousness. See, in particular, *In re Rouffet*, 47 USPQ 2d 1453, 1458 (Fed. Cir. 1998). Further, see, *In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988), wherein the Court found that “The consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art ... Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant’s disclosure.” Moreover, in *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Int’f 1985); the Court found that “To support the conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed combination or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references ... [S]implicity and hindsight are not proper criteria for resolving the issue of obviousness.” In *Ex parte Haymond*, 41 USPQ 2d 1217 (Bd. of Appeals 1996) the Court found that it is impermissible to use the claimed invention as an instruction manual or “template” in order to render the claimed invention obvious.

Moreover, claims 7, 9, 11 and 14-16 are dependent upon a valid base claim 1.

Applicants submit that claims 1-20 and 24-29 are in condition for allowance and therefore, respectfully request reconsideration of these claims.

Respectfully submitted,

A handwritten signature in black ink, reading "Carol A. Marmo". The signature is fluid and cursive, with the first name "Carol" and last name "Marmo" clearly distinguishable.

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